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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/654,082 | 09/03/2003 | Steven R. Lange | 58308.US | 4109 |

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LUEDEKA, NEELY & GRAHAM, P.C.
P O BOX 1871
KNOXVILLE, TN 37901

EXAMINER

RAO, SHEELA, S

ART UNIT PAPER NUMBER

2125

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/654,082

Applicant(s)

LANGE, STEVEN R.

Examiner

Sheela Rao

Art Unit

2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 03 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-20 are pending and presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,107,275 to Tsuruoka et al. in view of US Patent No. 6,915,172 B2 to Parent et al.

Tsuruoka et al. (hereinafter, "Tsuruoka") teach of an exposure control system that is used in an exposure apparatus having a laser as a source for producing radiation energy for printing a pattern of a mask on to a semiconductor wafer. More particularly, the exposure system is used to control the amount of exposure of radiation on the semiconductor wafers. While Tsuruoka discloses a radiating apparatus and a computer system to control the exposure of such on a substrate as per the instant invention, the prior art of reference fails to teach the use of a method/means of limiting the amount of exposure to radiation by using a database of information for optimized control as per the instant claims. To this effect, the prior art to Parent et al. (hereinafter, "Parent") is relied upon. The patented invention to Parent teaches a method for enhancing/optimizing process control. An embodiment of the patented invention is described with an example; the limitations of claims 1, 8, and 15 are similar to those described by the example. The embodiment used includes a predictive process optimizer (PPO) monitoring tool that manages the production process and collects data for the process. In doing so, the development of a database is described, wherein values regarding the product being processed is gathered or compiled and stored in the adaptation process engine that is a part of the PPO, see col. 3: ll.49, et seq. and col. 5: ll. 22-38. This data is then used as unique product identification and is available for future access, see col. 3: ll. 62 onwards, and col. 6: ll. 31-41; and further used to modify or optimize the operation of the processing system, see col. 4: ll. 3-8. The inputting of information into the controlling apparatus as per

claims 2 and 9 is taught by Parent as possible through automated means or manually handled by an operator. With regard to instant claims 3, 10, and 16, wherein the storage and retrieval of the information is claimed, Parent teaches this at column 5, lines 22-38 and column 6, lines 30-33. The step of modifying the operation of the processing apparatus as per instant claims 7, 14, and 20, the disclosure by Parent states that the predictions made for the variations in production may be used to help eliminate scraps, downtime, and poor quality (see col.3: ll. 2-3) which are all means for improving production and increasing optimization. In addition, Parent states that the various input variables and inline responses are transformed into final product quality predictions, see col. 4: ll. 3-8 and col. 7: ll. 1-3. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combined the exposure control system of Tsuruoka with the optimization database methodology of Parent. The inclusion of the optimizing method of Parent enables the exposure control system of Tsuruoka to operate in a more reliable and efficient manner. A more optimal exposure system would reduce damage and enhance processing. As indicated by Parent, the PPO monitoring tool may be used in conjunction with automated processing equipment configured to the needs of any manufacturing process and environment; thereby consenting to the use with a radiation exposure apparatus.

With regard to the limitations of instant claims 4, 5, and 6, Tsuruoka teaches the processing or fabrication of an integrated circuit substrate as per claims 5, 12, and 18 and uses a laser in the radiating of the substrate as per claim 6, 13, and 19. With respect to the radiating apparatus being an inspection system as in instant claims 4, 11, and 17, both the references of prior art (Tsuruoka and Parent) teach of system/processes where in the product process is closely viewed and/or observed, i.e. inspected. Additionally, the inventions are checking the products against established and/or estimated standards. Therefore, foreseeing the use of an inspection system.

The limitations of instant claims 8-14 and 15-20 are taught by the prior arts of reference as per the aforementioned discussion. These limitations are parallel in nature to the limitations featured in instant claims 1-7 as claims 8-14 are directed to the apparatus for processing while claims 15-20 are directed to the software program product adapted to control the apparatus.

For the reasons stated above, the limitations of instant claims 1-20 are deemed unpatentable as they are taught and/or fairly suggested by the prior arts of record.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brunnemann USPN 6,609,040,B1
Teaches of a method of analyzing and optimizing a multistage manufacturing process.

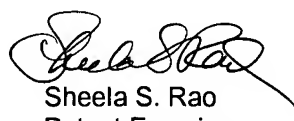
Takahashi USPN 6,023,068
Teaches of an apparatus for semiconductor device manufacture.

Hiatt et al. US Patent Application Publication US 2002/0070469 A1
Teaches of a method and apparatus for optimizing a rubber manufacturing.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheela Rao whose telephone number is (571) 272-3751. The examiner can normally be reached Monday - Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on (571) 272-3749. The fax number for the organization where this application or any proceeding papers is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. It should be noted that status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should any questions arise regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheela S. Rao
Patent Examiner
Art Unit 2125